

Table 7-21. Summary of ecological risk assessment screening steps used at WAG 4 sites.

Operable Unit	Site Code	Site Description	Site Screening Step ^a	EBSL & Bkgd Screening Step ^b	HQ Screening Step ^c	Pathway to Species of Concern ^{d,e}	Other Rationale/Final Comments
OU 4-01	CFA-09	Central Gravel Pit	E	NA	NA	NA	There is no source.
	CFA-11	French Drain (containing 5 in. shell) N. of CFA-633	E	NA	NA	NA	There is no source.
OU 4-02	CFA-13	Dry Well (South of CFA-640)	C	C	M	ss	October 1997 data indicate that soil at 6 ft below grade chromium ranges from 9.89 to 11.7 mg/kg and 1,1,2-trichloro-1,2,2-trifluoroethane ranges from 0.004 to 0.005 mg/kg. Several metals, VOCs, and PAHs exceeded EBSLs. HQs <1: Sb, As, PCBs, BaA, BbF, BghiP, BkF, chrysene, I(1,2,3-cd)P, Cd and Se; HQs <1 to 2: CrIII, Hg and pyrene, HQ = 4: Ag; HQ <1 to 33: Pb; and HQ <1 to 453: Zn.
	CFA-14	Two Dry Wells (CFA-665)	E	NA	NA	NA	No data are available. The wells were not located.
	CFA-15	Dry Well (CFA-674)	C/R	M	E	NA	The source was removed in 1997. November 1997 data indicate that soil samples from 8 ft below grade contained Cu, Pb and Hg at concentrations above background and EBSLs. Pb and Hg had HQs <1 and Cu had an HQ <9.
	CFA-16	Dry Well (South of CFA-682 Pumphouse)	E	NA	NA	NA	There is no source.
OU 4-03	CFA-18	Fire Department Training Area, Oil Storage Tank	E	NA	NA	NA	There is no source.
	CFA-19	Gasoline Tanks (2) East of CFA-606	E	NA	NA	NA	There is no source.
	CFA-20	Fuel Oil Tank at CFA-609 (CFA-732)	E	NA	NA	NA	There is no source.
	CFA-21	Fuel Tank at Nevada Circle 1 (South by CFA-629)	C	T	T	ss	The source was removed in 1991. TPH was initially identified. The maximum TPH concentration was 54,000 mg/kg, which exceeded the EBSL. The HQ for TPH was <3 and CFA-21 was retained as an ecological risk site.

Table 7-21. (continued).

Operable Unit	Site Code	Site Description	Site Screening Step ^a	EBSL & Bkgd Screening Step ^b	HQ Screening Step ^c	Pathway to Species of Concern ^{d,e}	Other Rationale/Final Comments
	CFA-22	Fuel Oil Tank at CFA-640	C/E	NA	NA	NA	The source was removed in 1991. TPH and VOCs were initially identified. The maximum TPH concentration was 8,400 mg/kg, but contamination was below 10 ft; therefore, CFA-22 was eliminated as an ecological risk site.
	CFA-23	Fuel Oil Tank at CFA-641	C	T & V	E	NA	The source was removed in 1990. TPH and toluene were initially identified. Toluene did not exceed the EBSL. The maximum TPH concentration was 100 mg/kg, which exceeded the EBSL. The HQ is <1 therefore, CFA-23 was eliminated as an ecological risk site.
	CFA-24	Fuel Tank at Nevada Circle 2 (South by CFA-629)	C	T	E	NA	The source was removed in 1991. TPH was initially identified. The maximum TPH concentration was 2600 mg/kg at CFA-24. The HQ is <1 therefore, CFA-24 was eliminated as an ecological risk site.
	CFA-25	Fuel Oil Tank at CFA-656 (north side)	C	E	NA	NA	The source was removed in 1990. TPH was initially identified but the maximum TPH concentration was 20 mg/kg, which did not exceed the EBSL. Therefore, CFA-25 was eliminated as an ecological risk site.
	CFA-27	Fuel Oil Tank at CFA-669	C	T & V	E	NA	The source was removed in 1990. TPH and BTEX were initially identified. The maximum TPH concentration was 1,100 mg/kg, which exceeded the EBSL. The HQ for TPH is <1 therefore, CFA-27 was eliminated as an ecological risk site.
	CFA-28	Fuel Oil Tank at CFA-674 (West)	C	T	E	NA	The source was removed in 1992. TPH was initially identified. The maximum TPH concentration was 57.4 mg/kg, which exceeded the EBSL. The HQ for TPH is <1 therefore, CFA-28 was eliminated as an ecological risk site.
	CFA-29	Fuel Oil Tank at CFA-664	C	E	NA	NA	The source was removed in 1990. TPH was initially identified. The maximum TPH concentration was 9 mg/kg, which did not exceed the EBSL. Therefore, CFA-29 was eliminated as ecological risk site.

Table 7-21. (continued).

Operable Unit	Site Code	Site Description	Site Screening Step ^a	EBSL & Bkgd Screening Step ^b	HQ Screening Step ^c	Pathway to Species of Concern ^{d,e}	Other Rationale/Final Comments
	CFA-30	Fuel Oil Tank at CFA-665	C	T	E	NA	The source was removed in 1989. TPH and ethylbenzene were initially identified. The maximum TPH concentration was 76 mg/kg, which exceeded the EBSL. Ethylbenzene did not exceed the EBSL. The HQ for TPH is <1, therefore, CFA-30 was eliminated as an ecological risk site.
	CFA-31	Waste Oil Tank at CFA-754	C	V & T	T	ss	The source was removed in 1992. TPH, ethylbenzene, toluene, xylene and TCE were initially identified. The maximum TPH concentration was 5,610 mg/kg, which exceeded the EBSL. Ethylbenzene, toluene, xylene and TCE did not exceed EBSLs. The HQ for xylene is <1 and for TPH is 1. Therefore, CFA-31 was retained an ecological risk site.
	CFA-32	Fuel Oil Tank at CFA-667 (North)	C	E	NA	NA	The source was removed in 1990. TPH was initially identified. The maximum TPH concentration was 30 mg/kg at CFA-32, which did not exceed the EBSL. Therefore, CFA-32 was eliminated as an ecological risk site.
	CFA-33	Fuel Oil Tank at CFA-667 (South)	E	NA	NA	NA	The source was removed in 1990. No contaminants were identified.
	CFA-34	Diesel Tank at CFA-674 (South)	C	T	E	NA	The source was removed in 1990. TPH was initially identified. The maximum TPH concentration was 290 mg/kg, which exceeded the EBSL. The HQ for TPH is <1, therefore CFA-34 was eliminated as an ecological risk site.
	CFA-35	Sulfuric Acid Tanks at CFA-674 (West)	C	E	NA	NA	The source was removed in 1989. Metals were initially identified but did not exceed EBSLs. Therefore, CFA-35 was eliminated as an ecological risk site.
	CFA-36	Gasoline Tanks at CFA-680	E	NA	NA	NA	The source was removed in 1990. No contaminants were identified.

Table 7-21. (continued).

Operable Unit	Site Code	Site Description	Site Screening Step ^a	EBSL & Bkgd Screening Step ^b	HQ Screening Step ^c	Pathway to Species of Concern ^{d,e}	Other Rationale/Final Comments
OU 4-04	CFA-37	Diesel Tank at CFA-681 (South Side)	C	T	E	NA	The source was removed in 1990. TPH was initially identified. The maximum TPH concentration was 180 mg/kg, which exceeded the EBSL. The HQ for TPH is <1, therefore, CFA-37 was eliminated as an ecological risk site.
	CFA-38	Fuel Oil Tank, CFA-683	C	T	E	NA	The source was removed in 1992. TPH was initially identified. The maximum TPH concentration was 427 mg/kg, which exceeded the EBSL. The HQ for TPH is <1, therefore, CFA-38 was eliminated as an ecological risk site.
	CFA-45	Fuel Oil Tanks (CFA-605W)	C	E	NA	NA	The source was removed in 1991. TPH & BTEX were initially identified. The maximum TPH concentration was <1,000 mg/kg, below 10 ft which exceeded the EBSL. The HQ was <1. Therefore, CFA-45 was eliminated as an ecological risk site.
	CFA-39	Drum Dock (CFA-771)	E	NA	NA	NA	No source
	CFA-40	Returnable Drum Storage—South of CFA-601	C	T	T	s & ss	TPH was initially identified. The maximum TPH was <625 mg/kg (the detection limit of the screening method) which exceeded the EBSL. The HQ was 3. Therefore, CFA-40 was retained as an ecological risk site.
	CFA-41	Excess Drum Storage (South of CFA-674)	C	T	T	s & ss	TPH, BTEX, naphthalene & methylnaphthalene were initially identified. In May 1995, the maximum TPH was >1000 mg/kg, which was the detection limit of the screening method which exceeded the EBSL. The HQ was 20. Therefore, CFA-41 was retained as an ecological risk site.

Table 7-21. (continued).

Operable Unit	Site Code	Site Description	Site Screening Step ^a	EBSL & Bkgd Screening Step ^b	HQ Screening Step ^c	Pathway to Species of Concern ^{d,e}	Other Rationale/Final Comments
OU 4-05	CFA-04	Pond (CFA-674)	C & R	M, P & R	M	s & ss	Metals, asbestos, VOCs, SVOCs, radionuclides and PCBs were initially identified; Ba, Cd, CrIII, Co, Cu, Pb, Hg, Ni, nitrate, Ag, Pa-234m, Ra-226, Sr-90, Th-234, U-234, U-235, U-238 & Aroclor-1254 exceeded EBSLs. HQs are: Ba ≤1, Cd <1000, CrIII <2, Co <20, Cu <60, Pb <90, Hg >30,000, Ni <50, nitrate <1, Ag <6, V <200, PCBs <1. Samples from 0–10 ft contained 3.1 to 22.4 mg/kg As, 0.12 to 439 mg/kg Hg, 0.651 to 22.6 pCi/g U-234 and 0.73 to 35 pCi/g U-238. CFA-04 is retained in the ERA.
	CFA-50	Shallow Well east of CFA-654	C/E	NA	NA	NA	Removal action in July 1995. Three samples collected from 6.25 ft to 7.5 ft contain 3,050 mg/kg Al, 57,600 mg/kg Ca, 25.1 mg/kg Pb & 0.36 mg/kg Se above background concentrations. Al & Ca were eliminated from the human health risk assessment. Pb and Se were less than residential screening level or had an HQ <1, respectively. Therefore, CFA-50 was eliminated as an ecological risk site.
OU 4-06	CFA-06	Lead Shop (outside areas)	C	C	M	s	The source was removed in 1996. Soil samples analyzed between 0 and 1 ft contained from 10.4 to 14.5 mg/kg As and from 10.4 and 153 mg/kg Pb, which exceeded EBSLs. HQs are: As<10 and Pb <200. CFA-06 was retained as an ecological risk site.
	CFA-43	Lead Storage Area	C	M	M	s	Metals were initially identified; Pb exceeded the EBSL. The HQ is: Pb <70. Therefore, CFA-43 is retained in the ERA.
	CFA-44	Spray Paint Booth Drain (CFA-654)	C	M	E	NA	Metals were initially identified; Pb exceeded EBSL. HQ is: Pb <1. Therefore, CFA-44 was eliminated in the ERA.
OU 4-07	CFA-07	French Drain (E/S of CFA-633)	E	NA	NA	NA	No exposure pathway to ecological receptors because contaminants are >12 ft below grade.

Table 7-21. (continued).

Operable Unit	Site Code	Site Description	Site Screening Step ^a	EBSL & Bkgd Screening Step ^b	HQ Screening Step ^c	Pathway to Species of Concern ^{d,e}	Other Rationale/Final Comments
	CFA-12	Two French Drains (CFA-690)	C & R	S, P & R	S	ss	VOCs, SVOCs, PCBs & radionuclides were initially identified; PCP exceeded the EBSL, but there is no TRV for this COPC. CFA-12 is eliminated in the ERA.
	CFA-48	Chemical Washout Area South of CFA-633	C	M	E	NA	Metals were initially identified. Pb and Hg exceeded EBSLs but the HQs were <1. Therefore, CFA-48 was eliminated in the ERA.
OU 4-08	CFA-08	Sewage Plant (CFA-691), Septic Tank (CFA-716), and Drain Field	C & R	V, S, P, M & R	M	s & ss	VOCs, SVOCs, PCBs, metals & radionuclides were initially identified; Aroclor-1254, chloromethane, BaP, As, CrIII, Cu, Pb, Hg, Ni, Se, and Ag exceeded EBSLs. HQs are: As <10, Cr <2, Cu <10, Pb <30, Hg <30, Ni <10, Se <20, Ag <5, BaP <1 and PCBs <1 therefore, CFA-08 is retained in the ERA.
	CFA-49	Hot Laundry Drain Pipe	R	E	NA	NA	Radionuclides were initially identified but did not exceed EBSLs. Contaminants were detected in soil samples from 26-5 to 27.0 ft below grade.
OU 4-09	CFA-10	Transformer Yard Oil Spills	C	M & P	M	s	Metals & PCBs were initially identified; Sb, As, Cd, CrIII, Cu, Pb, Hg, Ni, Ag, Zn & Aroclor-1254 exceeded EBSLs. HQs are: Sb <4, As <8, Cd <2000, Co <30, Cr <1, Cu <70, Pb <3000, Hg <4, Ni <20, Zn <70, and PCBs <1. A maximum concentration of 3,300 mg/kg Pb was detected between 0 and 0.5 ft below grade. Therefore, CFA-10 is retained in the ERA.
	CFA-26	CFA-760 Pump Station Fuel Spill	C	T	T	ss	The source was removed in 1986. VOCs, SVOCs and TPH were initially identified. The maximum TPH was 3,470 mg/kg which exceeded the EBSL. The HQ for TPH is <4. Therefore, CFA-26 is retained as an ecological risk site.
	CFA-42	Tank Farm Pump Station Spills	C	E	NA	NA	The source was removed in 1997. VOCs, SVOCs & TPH were initially identified. Minor contamination remains below 10 ft. Therefore, CFA-42 is eliminated in the ERA.
	CFA-46	Cafeteria Oil Tank Spill (CFA-721)	E	NA	NA	NA	No exposure pathway to ecological receptors because contaminants are >10 ft below grade.

Table 7-21. (continued).

Operable Unit	Site Code	Site Description	Site Screening Step ^a	EBSL & Bkgd Screening Step ^b	HQ Screening Step ^c	Pathway to Species of Concern ^{d,e}	Other Rationale/Final Comments
OU 4-10	CFA-01	Landfill I	NA	NA	NA	NA	See OU 4-12 below.
OU 4-11	CFA-05	Motor Pool Pond	C & R	V & M	V & M	s & ss	VOCs, PCBs, metals & radionuclides were initially identified; As, Ba, Cd, CrIII, Co, Cu, Pb, Mn, Hg, Ni, and 4-methyl-2-pentanone exceeded EBSLs. HQs are: As <20, Ba=1, Cd <10,000, Co <20, Cu <100, Pb <1,000, Mn <20, Hg <80, and Ni <10. There is no TRV for 4-methyl-2-pentanone. Therefore, CFA-05 is retained in the ERA.
OU 4-12	CFA-01	Landfill I	C	M, S&V	M & S	ss	Miscellaneous wastes possibly containing VOCs, SVOCs, TPH, metals, asbestos & PCBs were initially identified. Several VOCs, SVOCs and metals exceeded EBSLs. HQs are: BaP <2, BbF <1, BghiP <1, BkF <1, CrIII <2, chrysene <1, Cu <30, I(1,2,3-cd)P <1, Pb <100, Ag <4, and Zn <30. Therefore, CFA-01 is retained in the ERA.
	CFA-02	Landfill II	C	V, S & M	M & S	s & ss	Miscellaneous wastes possibly containing VOCs, SVOCs, TPH, metals, asbestos & PCBs were initially identified. TPH was not analyzed; 2-methylnaphthalene, 4-methyl-2-pentanone, acetone, BaP, BbF, BghiP, BkF, chrysene, DahA, dibenzofuran, I(1,2,3cd)P, PCP, As, Pb & Hg exceeded EBSLs. HQs are: 2-methylnaphthalene, BaP, BghiP, chrysene, DahA, I(1,2,3-cd)P <1; acetone <20, BbF = 1, BkF <2, As <20, Pb <700, Hg <5. There are no TRVs for 4-methyl-2-pentanone, dibenzofuran or pentachlorophenol. Therefore, CFA-02 is retained in the ERA.
	CFA-03	Landfill III	C	E	NA	NA	Miscellaneous wastes possibly containing VOCs, SVOCs, TPH, metals, asbestos, PCBs & radionuclides were initially identified. Although Pb and Se exceeded the EBSLs, Pb only slightly exceeded background (17.3 mg/kg v. 17 mg/kg) and the Se concentration was identified by the analytical laboratory but may not be present. Therefore, CFA-03 was eliminated as an ecological risk site.

Table 7-21. (continued).

Operable Unit	Site Code	Site Description	Site Screening Step ^a	EBSL & Bkgd Screening Step ^b	HQ Screening Step ^c	Pathway to Species of Concern ^{d,e}	Other Rationale/Final Comments
OU 4-13	CFA-51	Dry Well at North end of CFA-640	C & R	R & M	M	ss	Metals including Al, As, Ba, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Ni, Na, V, Zn & Cs-137 were initially identified. Cd, Cu, & Pb, exceeded EBSLs; only Cd & Cu exceeded HQs. HQs are Cd ≤ 3 and Cu ≤ 1 (for plants only). Although a limited size and number of plants that would be affected, CFA-51 is retained in the ERA.
	CFA-52	Diesel Fuel UST (CFA-730) at Bldg. CFA-613 Bunkhouse	C/E	NA	NA	NA	TPH, TCA & PCE were initially identified; the data were evaluated and contamination was detected below 10 ft. Therefore, CFA-52 was eliminated as an ecological risk site.

a. = See Tables 7-2 & 7-3

b. = See Tables 7-8, 7-9 & 7-10

c. = See Table 7-19

E = eliminated

NA = not applicable

R = retained for radiological source

C = retained for chemical source

M = retained for metal source

S = retained for SVOC source

T = retained for TPH source

V = retained for VOC source

U = retained for many unknown sources

d. See Table 7-19. For species of concern, see Appendix K.

e. ss = subsurface soil pathway.

s = surface soil pathway.

Table 7-22. Summary of the sites with potential for posing risk to ecological receptors.

Site Number	Site Description and Size (sq. meters)	Contaminant of Potential Concern	Hazard Quotient
CFA-01	Landfill I 4.30E+04	Benzo(a)pyrene	<1 to 2
		Chromium III	<1 to 50
		Copper	<1 to 30
		Lead	≤1 to 200
		Mercury	<1 to 6
		Silver	≤1 to 10
		Zinc	≤1 to 30
CFA-02	Landfill II 7.07E+05	4-methyl-2-pentanone	NA
		2-methylnaphthalene	NA
		Acetone	≤1 to 20
		Arsenic	≤1 to 20
		Dibenzofuran	NA
		Lead	≤1 to 950
		Mercury	≤1 to 20
CFA-04	Pond near CFA-674 6.88E+03	Pentachlorophenol	NA
		Arsenic	<1 to 20
		Barium	≤1 to 6
		Cadmium	≤1 to 1,000
		Chromium III	<1 to 100
		Cobalt	≤1 to 20
		Copper	≤1 to 150
		Lead	≤1 to 90
		Mercury	<1 to 30,000
		Nickel	<1 to 110
		Silver	<1 to 20
		Vanadium	≤2 to 200
CFA-05 (ditch)	Motor Pool Pond 7.43E+03	Arochlor	<1 to 1
		4-methyl-2-pentanone	NA
		Arsenic	≤1 to 5

Table 7-22. (continued).

Site Number	Site Description and Size (sq. meters)	Contaminant of Potential Concern	Hazard Quotient
		Cadmium	≤1 to 4,000
		Chromium III	≤1 to 90
		Cobalt	≤2 to 20
		Copper	≤1 to 40
		Lead	≤1 to 200
		Manganese	<1 to 14
		Mercury	≤1 to 9
		Nickel	≤1 to 9
		Selenium	<1 to 5
		Vanadium	<1 to 20
		Zinc	<1 to 20
CFA-06	Lead Shop (outside areas) 2.5E+03	Arsenic	≤1 to 10
		Lead	≤1 to 200
CFA-08	Sewage Plant (CFA-691), Septic Tank (CFA-716), and Drainfield 1.85E+04	Arsenic	≤1 to 10
		Chloromethane	NA
		Chromium III	<1 to 80
		Copper	≤1 to 20
		Lead	≤1 to 40
		Mercury	≤1 to 30
		Nickel	≤1 to 20
		Selenium	≤1 to 7
		Silver	≤1 to 10
CFA-10	Transformer Yard Oil Spills 8.08E+02	Antimony	<1 to 4
		Arsenic	<1 to 8
		Cadmium	≤1 to 2,000
		Chromium III	<1 to 100
		Cobalt	≤1 to 20
		Copper	<1 to 70
		Lead	<1 to 5,000

Table 7-22. (continued).

Site Number	Site Description and Size (sq. meters)	Contaminant of Potential Concern	Hazard Quotient
CFA-13	Dry Well (South of CFA-640)	Manganese	≤ 5 to 20
		Mercury	<1 to 4
		Nickel	<1 to 20
		Zinc	<1 to 70
		Antimony	<1 to 2
		Cadmium	<1 to 60
		Chromium III	<1 to 2
		Copper	≤1 to 20
		Lead	<1 to 20
		Mercury	<1 to 2
		Nickel	<1 to 3
		Silver	<1 to 10
		Zinc	<1 to 453
CFA-21	Fuel Tank at Nevada Circle (S by CFA-629) 7.00E+00	TPH	<1 to 3
CFA-26	CFA-760 Pump Station Fuel Spills 1.12E+02	TPH	≤1 to ≤4
CFA-40	Returnable Drum Storage (south of CFA-601) 5.40E+02	TPH	<1 to 3
CFA-41	Excess Drum Storage (south of CFA-674) 6.97E+03	TPH	<1 to 20
CFA-43	Lead Storage Area 1.53E+04	Lead	≤1 to 300
CFA-51	Dry Well at north end of CFA-640 1.00E-01	Cadmium	<1 to 5
		Copper	<1 to 3

NA = not assessed; no TRV.